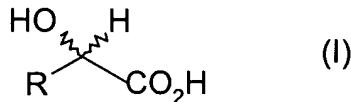


AMENDMENTS TO THE CLAIMS

1. (Currently amended) A method for the microbiological isomerization of alpha-hydroxycarboxylic acids of the formula I



where

R is straight-chain or branched C₂-C₈ alkyl or C₂-C₈ alkenyl or -(CH₂)_n-Cyc, where n is an integer of 0 to 4, and Cyc is an unsubstituted or mono- or polysubstituted, mono- or binuclear carbo- or heterocyclic ring,

~~wherein said method comprises isomerizing a substrate comprising essentially a first stereoisomeric form of an alpha-hydroxycarboxylic acid of the formula (I) is isomerized with the aid of an enzyme with alpha-hydroxycarboxylic acid racemase activity and, if appropriate, isolating the resulting resultant isomer mixture or a resulting resultant second stereoisomer is isolated, or removing the a resulting resultant second stereoisomer is removed from the reaction equilibrium,~~

wherein the enzyme is a lactate racemase with an expanded substrate spectrum, which isomerizes at least one further alpha-hydroxycarboxylic acid of the formula [[I]] (I).

2. (Currently amended) A method as claimed in claim 1, wherein the ~~enzymatic~~ isomerization is effected by converting the substrate with a purified enzyme, an enzyme-containing cell extract or in the presence of intact cells which express at least one enzyme with alpha-hydroxycarboxylic acid racemase activity.

3. (Currently amended) A method as claimed in ~~any of the preceding claims~~ claim 1, wherein the enzyme with alpha-hydroxycarboxylic acid racemase activity ~~can be~~ is isolated from microorganisms of the genus *Lactobacillus* or *Lactococcus*.
4. (Currently amended) A method as claimed in ~~any of claims 1 to 3~~ claim 1, wherein the conversion is carried out in the presence of intact cells of microorganisms of the genus *Lactobacillus* or *Lactococcus* or intact cells of a recombinant microorganism which express alpha-hydroxycarboxylic acid racemase activity.
5. (Currently amended) A method as claimed in claim 4, wherein the microorganism is selected from ~~among the group consisting of~~ L. paracasei, L. delbrueckii, L. sakei and L. oris.
6. (Currently amended) A method as claimed in claim 5, wherein the microorganism is selected from ~~among the group consisting of~~ the strains *L. paracasei* DSM 20207 (DSM 15755), *L. paracasei* and DSM 2649 (DSM 15751), *L. delbrueckii* DSM20074 (DSM 15754), *L. sakei* DSM 20017 (DSM 15753) and *L. oris* DSM 4864 (DSM 15752).
7. (Currently amended) A method as claimed in ~~any of the preceding claims~~ claim 1, wherein the enzyme isomerizes at least one compound selected from ~~among the group consisting of~~ phenyl lactate, 4-fluorophenyl lactate, 2-hydroxy-4-phenylbutyric acid, 2-hydroxy-4-methylpentanecarboxylic acid, 2-hydroxy-3-methylbutyric acid.
8. (Currently amended) A ~~screening~~ method for screening microorganisms which express an enzyme with alpha-hydroxycarboxylic acid racemase activity, wherein the method comprises growing a lactate-producing or lactate-metabolizing microorganism, in which the having racemase activity is expected, is grown in the presence of a substrate comprising essentially a stereoisomeric form of an alpha-hydroxycarboxylic acid of the above formula [[I]] (I), and examining the reaction medium is examined for racemization of the substrate.
9. (Currently amended) A screening The method as claimed in claim 8, wherein the microorganisms are of the genus *Lactobacillus* or *Lactococcus*, or recombinant microorganisms

which express alpha-hydroxycarboxylic acid racemase activity as defined in claim 4 or 5 are screened.

10. (Currently amended) A screening The method as claimed in claim 8 or 9, wherein the microorganisms obtained from the screening which racemize the essentially the stereoisomeric substrate to 1 to 100% are screened for.

11. (Currently amended) An alpha-hydroxycarboxylic acid racemase obtainable by obtained by growing a microorganism which has tested positively for selected according to claim 8 which has a positive racemase activity in a screening method as claimed in any of claims 8 to 10 and isolating the alpha-hydroxycarboxylic acid racemase from the culture.

12. (Currently amended) An The alpha-hydroxycarboxylic acid racemase as claimed in claim 11, which wherein the racemase activity racemizes at least one alpha-hydroxycarboxylic acid of the above formula I to (I) between 1 to 100%, preferably 20 to 100%, in particular more preferably 50 to 100%.

13. (Currently amended) A nucleic acid sequence encoding at least one alpha-hydroxycarboxylic acid racemase as claimed in claim 11 or 12.

14. (Currently amended) An expression vector comprising a coding the nucleic acid sequence as claimed in claim 13 in operable linkage operably linked with at least one regulatory nucleic acid nucleotide sequence.

15. (Currently amended) A recombinant prokaryotic or eukaryotic microorganism comprising at least one nucleic acid sequence as claimed in claim 13 or at least one expression vector as claimed in claim 14.

16. (Currently amended) A method for producing a protein with alpha-hydroxycarboxylic acid racemase activity, wherein [[a]] the method comprises growing the recombinant prokaryotic or eukaryotic microorganism as claimed in claim 16 15 is grown and isolating the protein is isolated from the culture.

17. (Currently amended) A method for isolating a protein with alpha-hydroxycarboxylic acid racemase activity, wherein the method comprises disrupting a microorganism which has tested positively for having a positive racemase activity is disrupted, removing cell wall fragments are removed and isolating the protein with the desired enzyme activity is isolated.
18. (Currently amended) A The method as claimed in any of claims 1 to 7 claim 1, wherein the desired resultant second stereoisomer is essentially removed from the isomer mixture formed and the remainder remaining part of the isomer mixture is subjected to a further isomerization step.
19. (Currently amended) A The method as claimed in any of claims 1 to 7 claim 1, wherein the resultant isomer mixture formed is subjected to a chemical or enzymatic stereoselective subsequent reaction and the reaction mixture obtained is subjected to a further isomerization step.
20. (Currently amended) A The method as claimed in any of claims 1 to 7 claim 1, wherein the isomerization reaction is coupled with a chemical or enzymatic, enantioselective subsequent reaction, during which reaction the resulting desired resultant stereoisomer of the alpha-hydroxycarboxylic acid is removed from the isomerization reaction equilibrium.
21. (Currently amended) A The method as claimed in claim 19 or 20, wherein the chemical or enzymatic, enantioselective subsequent reaction is selected from among an esterification and or an amidation of the alpha-hydroxycarboxylic acid.
22. (New) The method as claimed in claim 20, wherein the chemical or enzymatic, enantioselective subsequent reaction is an esterification or an amidation of the alpha-hydroxycarboxylic acid.
23. (New) The method as claimed in claim 8, wherein the microorganisms are selected from the group consisting of *L. paracasei*, *L. delbrueckii*, *L. sakei* and *L. oris*.

24. (New) The alpha-hydroxycarboxylic acid racemase as claimed in claim 11, wherein the racemase activity racemizes at least one alpha-hydroxycarboxylic acid of the formula (I) between 20 to 100%.
25. (New) The alpha-hydroxycarboxylic acid racemase as claimed in claim 11, wherein the racemase activity racemizes at least one alpha-hydroxycarboxylic acid of the formula (I) between 50 to 100%.